Revisions to the Ambient Air Monitoring Regulations; Proposed Rule

Tribal Air Call

OAQPS

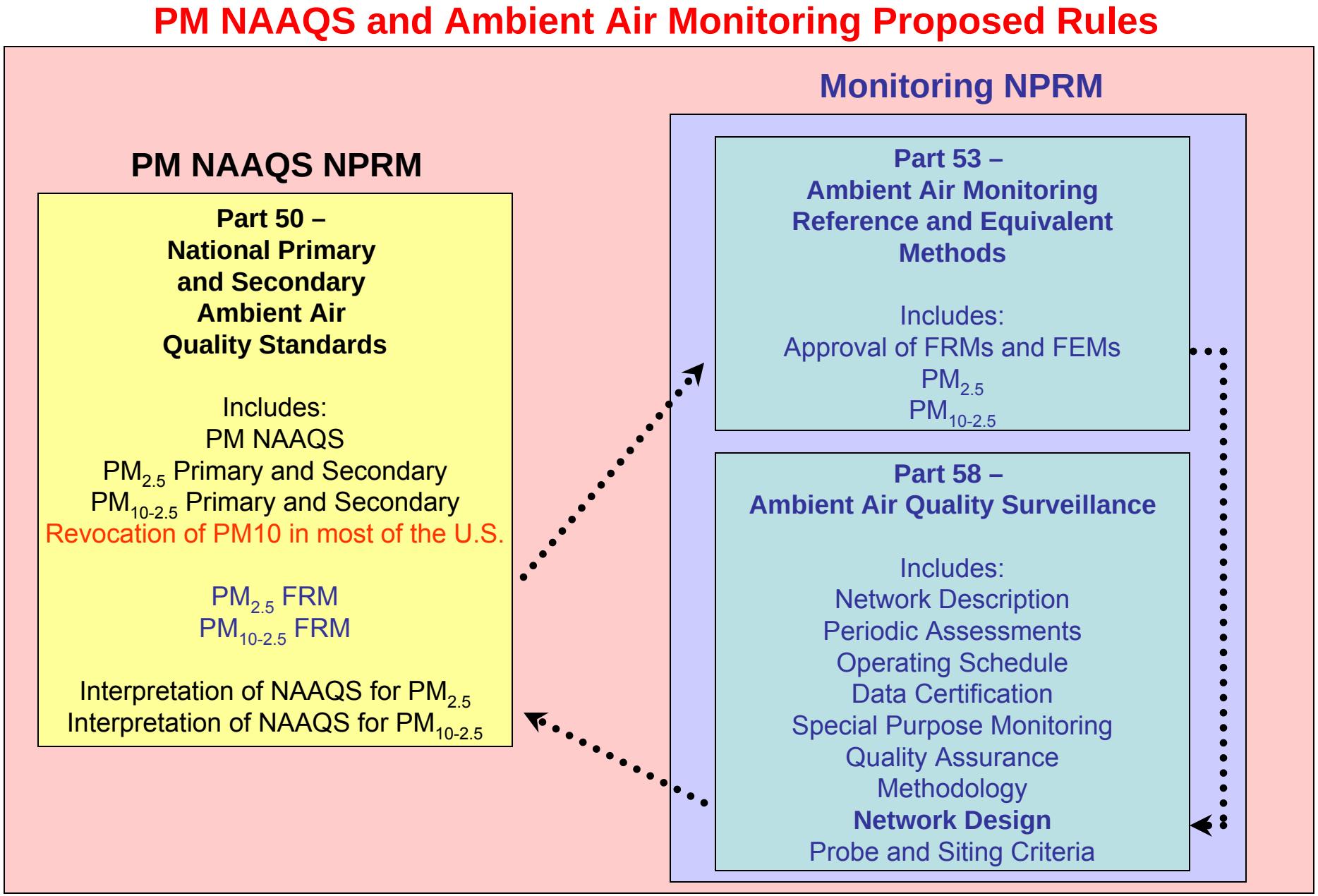
February 1, 2006

Notice of Proposed Rulemaking (NPRM) Schedule

- Signed by EPA Administrator on December 20, 2005
  - http://www.epa.gov/air/particles/actions.html
- Published in the Federal Register on January 17, 2006
  - http://www.epa.gov/ttn/amtic/40cfr53.html
- Public Comment period through April 17, 2006
- Public hearings expected in Philadelphia, PA; Chicago, IL; and San Francisco, CA on same day in early March
- Expect Final Rulemaking by September 27, 2006

- Public comments must be made though web site, E-mail, Fax, Mail, or hand delivered according to instructions in proposed rule. Discussions or comments made in today's conference call are not part of that process unless submitted according to instructions in the proposed rule.

How do the PM NAAQS and Ambient Air Monitoring Packages fit together?



NPRM – Revisions to the Ambient Air Quality Monitoring Regulations

- Revisions to monitoring and method approvals that support the PM NAAQS
- Changes in the Ambient Monitoring Program according to the National Monitoring Strategy

Major Components

- Part 53
  - Approval of reference and equivalent methods
    - New performance based criteria for $PM_{2.5}$ and $PM_{10-2.5}$ equivalent methods
- Part 58
  - New monitoring network for $PM_{10-2.5}$
  - Introduction of multi-pollutant sites
  - Put more of the state/local network under Regional Office review/approval instead of HQ review.
  - Updated Special Purpose Monitoring (SPM) provisions
  - Revisions to QA program
    - More formal use of statistics to quantify precision and bias
    - States responsible for independent QA audits of their programs
  - Incentives for "Approved Regional Methods" for $PM_{2.5}$
  - Network minimums go away for CO, SO_2, NO_2, and PM_{10}
    - Removal of existing sites generally requires EPA approval
  - Revised network minimums for Pb
  - Revised network minimums for O_3 and $PM_{2.5}$ based on population and design value

Proposed $PM_{10-2.5}$ FRM

- Two concurrently operated low-volume samplers with one measuring PM_{10} and the other $PM_{2.5}$
- Peer Reviewed by Clean Air Scientific Advisory Committee (CASAC)
  - Consensus support for $PM_{10-2.5}$ difference method as the most appropriate choice for an FRM to:
    - Approve continuous FEMs for use in the actual network
    - Quality assurance of network (via collocation)
  - Several strengths and weaknesses noted
  - Support for dichotomous method as possible alternative FRM, pending resolution of issues
  - Support for continuous Federal Equivalent Methods as primary method for use in network.

BGI PM_{10} FRM

BGI $PM_{2.5}$ FRM

R&P PM_{10} FRM Sequential Sampler

R&P $PM_{2.5}$ FRM Sequential Sampler

$PM_{10} - PM_{2.5} = PM_{10-2.5}$[5]

$PM_{10-2.5}$ Monitoring Program

- Methods
  - EPA is planning for continuous FEMs (e.g., TEOM-based) to be become the primary method in state/local network to best support daily NAAQS
    - Also a good option for Tribes (if they want to monitor)
  - Daily PM_{10} methods can be used to demonstrate attainment through 12/31/2012 – subject to network design criteria
- Quality Assurance Requirements Are Included in the Proposal
  - Tribes have to meet these, if required by grant or if using data for designations
  - Data Quality Objectives
  - Collocation Requirement
  - Performance Audits

$PM_{10-2.5}$ Network Sizing and Siting

- Minimum $PM_{10-2.5}$ monitoring requirements for States are based on MSA population (at least 100,000) and estimated design value. Zero to five required sites per MSA.
  - Approximately 225 monitors required in 150 MSAs based on 2002-2004 estimated design values and proposed $PM_{10-2.5}$ daily NAAQS of 70 ug/m3.
- No required minimums for Tribes (cannot be for any pollutant)
- Required sites must meet five part suitability test for comparison to NAAQS and to insure consistency with qualified $PM_{10-2.5}$ indicator.
  - Within boundaries of urbanized area $\geq$ 100,000.
  - Must be in census block group of population density $\geq$ 500 people per square mile (or within enclave of < 5 square miles area if population density < 500).
  - Must be population-oriented.
  - May not be in a source-influenced microenvironment such as a microscale or localized hot spot location.
  - $PM_{10-2.5}$ concentrations at the site must be dominated by re-suspended dust from high-density traffic on paved roads and PM generated by industrial sources and construction sources, and must not be dominated by rural windblown dust and soils and PM generated by agricultural and mining sources, as determined by the State (and approved by the Regional Administrator) in a site-specific assessment.

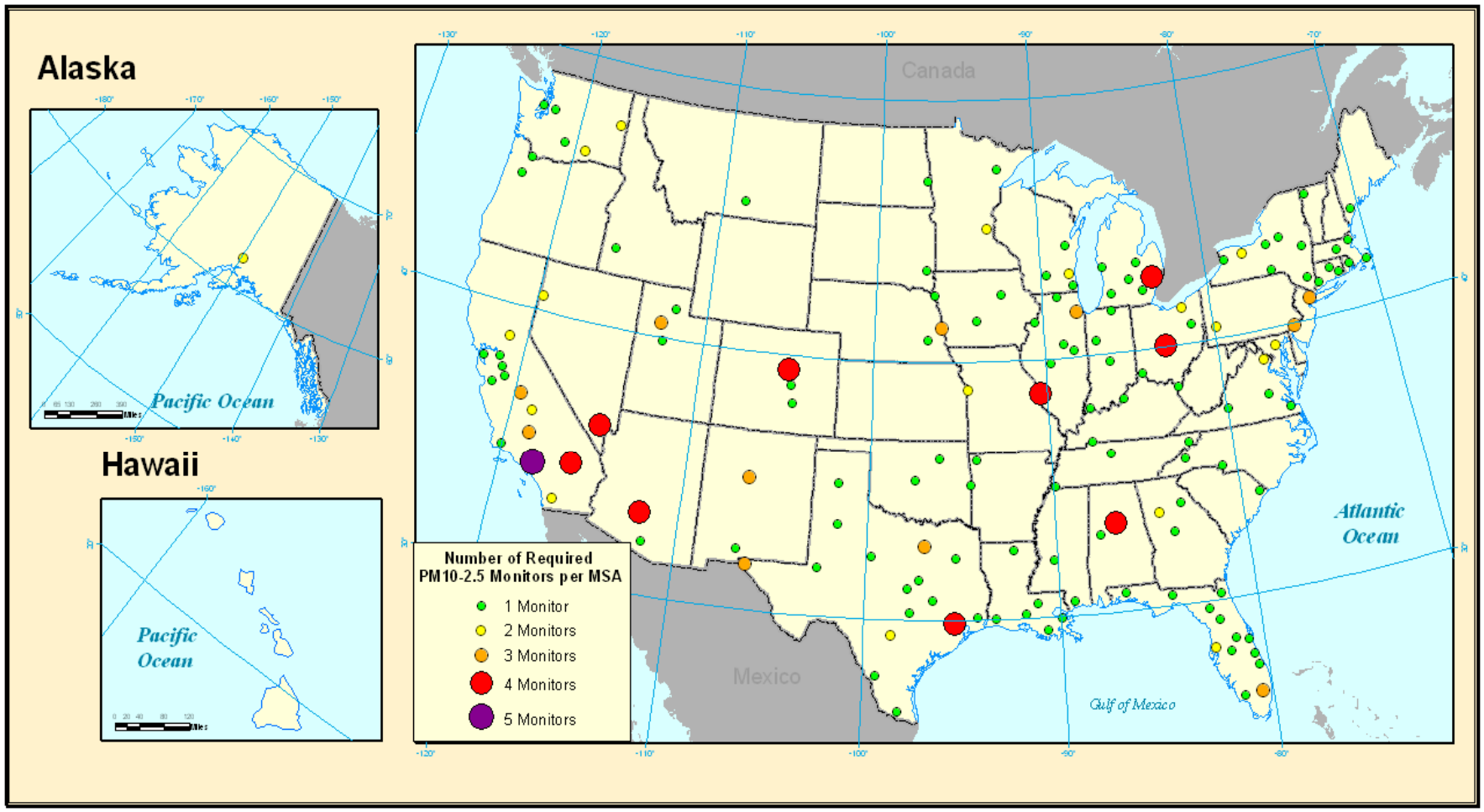


Illustration of $PM_{10-2.5}$ monitors that could be required by the proposed requirements in the monitoring NPRM. The circles, which are sized to indicate the number of required monitors, appear at the centroid of MSAs and do not imply the actual placement of any of the required monitors at particular locations within the MSA.

$PM_{10-2.5}$ Network Sizing and Siting - *continued*

- NPRM solicits comment on whether EPA should also allow PM_{10-2} monitoring to count towards nonattainment designations in other areas (small cities and rural areas) that have high emissions of industrial dust or highway road dust.
  - Could bring in more Tribal lands.
  - Domination issue would still apply, however.

Revisions to the Quality Assurance Program

- Ensure regs reflect current EPA QA Policy and requirements
  - QAPP/QMP, QA Manager (Lead), Graded Approach
- Combined Appendix A and B (PSD)
- DQOs for $PM_{10-2.5}$ and O_3 identified.
- Removed out of date QA methods
  - SO2/NO2 Manual Audit Checks
- Revised Performance Evaluation Language of PEP and NPAP
  - State/local monitoring org responsibility but allows for continued Federal implementation
  - EPA will work with each Tribe to get tribal sites audited
- Expanded audit concentration levels to account for precursor gas monitoring
- Reduced burden where it showed that we could
  - PEP Reduction
  - PM Collocation Reduction (number of sites & Sampling frequency
- Changed Statistics (forms and levels of aggregation)
  - Confidence limits at the site level for gaseous pollutants

CO, SO_2, NO_2, Pb, PM_{10}

- Generally, for all of these pollutants the EPA Region can approve the shutdown of a state/local site as part of the annual network review
- No minimums apply for CO, SO_2, NO_2
- PM_{10} - No requirement for continuation in any area where the PM_{10} NAAQS has been revoked
- Pb – required in areas where levels are still a concern
  - 2 sites required in areas above the NAAQS
    - 1 maximum exposure site
  - 10 Pb sites at NCore or urban air toxics sites for long-term trends; one per Region in most populated MSA/CSA

NCore Multi-pollutant Network

- ~75 Sites Nationally
  - ~55 Urban Sites at Neighborhood to Urban Scale
  - ~20 Rural Sites at Regional Scale (Tribal sites will be considered)
  - 1-3 sites per State
  - A State can be excused from operation if nearby State can reasonably represent them
- Pollutants
  - Particles
    - $PM_{2.5}$ filter-based and continuous, speciated $PM_{2.5}$, continuous $PM_{10-2.5}$
  - Gases
    - O_3, high-sensitivity CO, SO_2, NO/NO_y
  - Meteorology
    - Amb. Temp, WS, WD, RH
- Implementation
  - By January 1, 2011
  - Plans due July 1, 2009

$PM_{2.5}$ Federal Reference Method (FRM)

VSCC

- Proposed changes to improve the operation and maintenance of the monitoring network
  - Adopt the **Very Sharp Cut Cyclone (VSCC)** as an approved second stage separator for PM2.5. This would be in addition to the WINS
  - **Dioctyl Sebacate (DOS) oil** as an alternative oil for use in the WINS
  - Extend **filter recovery extension time**; 96 hours → **177 hours** (7 days, 9 hours)

	Day 0	Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8
Sample Days									
Current Recovery Period									
Proposed Recovery Period									

  - Modify filter transport temperature and post-sampling time requirements for final laboratory analysis; **filter transport temperature maintained at or below average ambient temperature during sampling** allows up to 30 days for post sampling conditioning and weighing.
- Reduced data reporting requirements for supporting information such as sample temperature and barometric pressure